

(19) World Intellectual Property
Organization
International Bureau



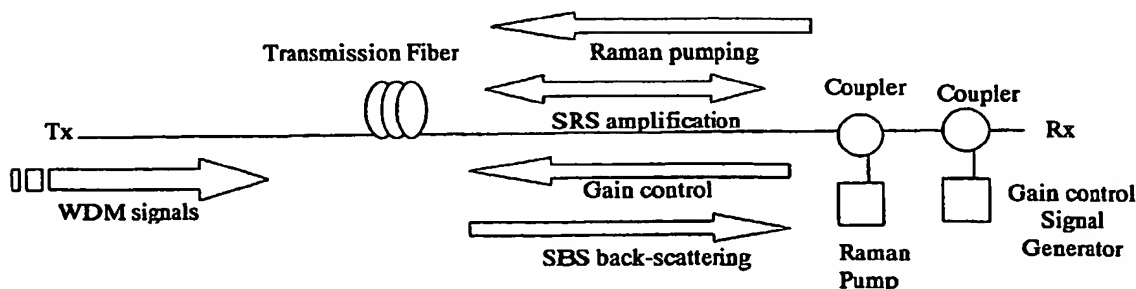
(43) International Publication Date
13 May 2004 (13.05.2004)

PCT

(10) International Publication Number
WO 2004/040809 A3

- (51) International Patent Classification⁷: **H04B 10/17**, H01S 3/30
- (21) International Application Number: PCT/IB2003/005115
- (22) International Filing Date: 13 October 2003 (13.10.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
MI2002A02329 31 October 2002 (31.10.2002) IT
- (71) Applicant (for all designated States except US): **MARCONI COMMUNICATIONS SPA** [IT/IT]; Via Lodovico Calda 5, I-16153 Genova (IT).
- (72) Inventors; and
(75) Inventors/Applicants (for US only): **FELLA, Paolo** [IT/IT]; Via Repubblica, 42, I-03040 Valvori (FR) (IT). **DI MURO, Rodolfo** [IT/GB]; 21 Drapers Fields, Canal Basin, Coventry, CV1 4RA (GB).
- (74) Agent: **CARDUS, Alan, Peter**; Marconi Intellectual Property, Crompton Close, Basildon, Essex SS14 3BA (GB).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:
— with international search report
- (88) Date of publication of the international search report:
22 July 2004
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: GAIN CONTROL IN OPTICAL AMPLIFIERS



(57) Abstract: A means and method for controlling the gain of an optical amplifier receiving one or more optical input signal channels has a source for generating a gain control signal, input to the optical amplifier at the opposite end to the input signal channels. The gain control signal is generated at a power level that produces stimulated Brillouin scattering (SBS) in the optical amplifier.

INTERNATIONAL SEARCH REPORT

In :ional Application No
PCT/IB 03/05115

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04B10/17 H01S3/30

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 H04B H01S

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

INSPEC, EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	US 6 160 657 A (LEE SEUNG-HEE ET AL) 12 December 2000 (2000-12-12) abstract column 2, line 21 - line 44 column 2, line 63 -column 3, line 7 figure 4	1,9-12, 20 2-8, 13-19
Y	US 6 441 950 B1 (CHEN CHIEN-JEN ET AL) 27 August 2002 (2002-08-27) abstract column 1, line 45 -column 2, line 21 column 3, line 35 - line 48 column 10, line 5 -column 11, line 7 figures 9,10 --- -/--	2-8, 13-19

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

A document defining the general state of the art which is not considered to be of particular relevance

E earlier document but published on or after the international filing date

L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

O document referring to an oral disclosure, use, exhibition or other means

P document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

& document member of the same patent family

Date of the actual completion of the international search

23 April 2004

Date of mailing of the international search report

03/05/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax (+31-70) 340-3016

Authorized officer

Reville, L

INTERNATIONAL SEARCH REPORT

In	onal Application No
PCT/IB 03/05115	

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>EP 0 883 255 A (NORTHERN TELECOM LTD)</p> <p>9 December 1998 (1998-12-09)</p> <p>abstract</p> <p>page 3, line 12 - line 25</p> <p>-----</p>	1-20

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/IB 03/05115

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 6160657	A	12-12-2000	DE 19850161 A1 GB 2330941 A ,B JP 11202375 A	06-05-1999 05-05-1999 30-07-1999
US 6441950	B1	27-08-2002	NONE	
EP 0883255	A	09-12-1998	CA 2238950 A1 EP 0883255 A2 JP 11084433 A US 6400496 B1	05-12-1998 09-12-1998 26-03-1999 04-06-2002